

CLAIMS

1. A printing system, comprising:

a print unit;

a calibration system having a learning mode operable to receive a master calibration page containing color value indicia, and further operable to measure the color value indicia to determine target color values each corresponding to a color value indicia; and

wherein the calibration system is configured to utilize one or more of the target color values to calibrate the print unit.

2. A printing system as recited in claim 1, wherein the calibration system has a normal mode that can be selected as an alternative to the learning mode, the normal mode being operable to calibrate the print unit according to the one or more target color values.

3. A printing system as recited in claim 1, wherein the calibration system has a normal mode that can be selected as an alternative to the learning mode, the normal mode being operable to utilize the one or more target color values to calibrate the print unit.

4. A printing system as recited in claim 1, wherein the calibration system is further configured to generate a target color value curve from the measured color value indicia, and wherein the calibration system has a normal mode that can be selected as an alternative to the learning mode, the normal mode being operable to calibrate the print unit according to the target color value curve.

5. A printing system as recited in claim 1, further comprising:
a first printing device that includes the print unit and the calibration system; and

one or more additional printing devices each configured to (i) receive the master calibration page (ii) measure the color value indicia to determine the target color values, and (iii) utilize the target color values to calibrate a print unit of each respective printing device such that the print units are calibrated substantially similar.

6. A printing system as recited in claim 1, wherein the calibration system is further configured to identify a designation area of the master calibration page that distinguishes the master calibration page from a local calibration page.

7. A printing system as recited in claim 1, wherein the calibration system comprises one or more sensors each configured to measure the color value indicia.

8. A printing system as recited in claim 1, wherein the color value indicia are in a finished state on the master calibration page.

9. A printing system as recited in claim 1, wherein:
the print unit is a component of a printing device; and
the calibration system is external to the printing device.

10. A printing system as recited in claim 1, wherein:
the print unit is configured to apply a colorant to a test element;
the calibration system is further configured to:

measure colorant levels of the colorant applied to the test element before the colorant is in a finished state;

convert the measured colorant levels to corresponding predicted color values based on a correlation between colorant levels and color values;

compare the predicted color values to the target color values;
and

calibrate the print unit if a difference between the predicted color values and the target color values exceeds a threshold value.

11. A printing system as recited in claim 10, wherein:
the print unit is further configured to apply the colorant to a print media;
the calibration system is further configured to:

measure color values of the colorant applied to the print media
after the colorant is in the finished state; and

establish the correlation between the measured colorant levels
and the measured color values.

12. A printing system, comprising:
a print unit;
a calibration system having a selectable one of:

a learning mode operable to receive a master calibration page
containing color value indicia, and further operable to measure the
color value indicia to determine target color values each corresponding
to a color value indicia; and

a normal mode operable to calibrate the print unit according to
one or more of the target color values.

13. A printing system as recited in claim 12, wherein the normal
mode is further operable to calibrate the print unit according to preset target
color values.

14. A printing system as recited in claim 12, wherein the calibration system is configured to generate a target color value curve from the measured color value indicia, and wherein the normal mode is further operable to calibrate the print unit according to the target color value curve.

15. A printing system as recited in claim 12, wherein at least one of the learning mode and the normal mode is selected via a user interface.

16. A printing system as recited in claim 12, wherein the master calibration page contains a designation area that initiates the calibration system to select the learning mode.

17. A printing system as recited in claim 12, wherein the calibration system is operable to identify a designation area of the master calibration page that distinguishes the master calibration page from a local calibration page, and wherein the calibration system is further operable to select the learning mode when identifying the designation area of the master calibration page.

18. A printing system as recited in claim 12, further comprising:

a first printing device that includes the print unit and the calibration system; and

one or more additional printing devices each configured to (i) receive a duplicate of the master calibration page containing substantially identical color value indicia, (ii) measure the substantially identical color value indicia to determine the target color values, and (iii) utilize the target color values to calibrate a print unit of each respective printing device such that the print units are calibrated substantially similar.

19. A printing system as recited in claim 12, wherein the calibration system comprises one or more sensors each configured to measure the color value indicia.

20. A printing system as recited in claim 12, wherein the color value indicia are in a finished state on the master calibration page.

21. A printing system as recited in claim 12, wherein:

the print unit is configured to apply a colorant to a test element;

the calibration system is configured to:

measure colorant levels of the colorant applied to the test element before the colorant is in a finished state;

convert the measured colorant levels to corresponding predicted color values based on a correlation between colorant levels and color values;

compare the predicted color values to the target color values;

and

calibrate the print unit if a difference between the predicted color values and the target color values exceeds a threshold value.

22. A printing system as recited in claim 22, wherein:

the print unit is further configured to apply the colorant to a print media;

the calibration system is further configured to:

measure color values of the colorant applied to the print media after the colorant is in the finished state; and

establish the correlation between the measured colorant levels and the measured color values.

23. One or more computer-readable media comprising computer-executable instructions that, when executed, direct a printing device to (i) receive a master calibration page containing color value indicia, (ii) measure the color value indicia to determine target color values each corresponding to a color value indicia, and (iii) utilize one or more of the target color values to calibrate a print unit.

24. One or more computer-readable media as recited in claim 23, further comprising computer-executable instructions that, when executed, direct the printing device to initiate a normal mode operable to calibrate the print unit according to the one or more target color values.

25. One or more computer-readable media as recited in claim 23, further comprising computer-executable instructions that, when executed, direct the printing device to initiate a learning mode to receive the master calibration page and measure the color value indicia.

26. One or more computer-readable media as recited in claim 23, further comprising computer-executable instructions that, when executed, direct the printing device to operate in conjunction with a calibration system to calibrate the print unit.

27. One or more computer-readable media as recited in claim 23, further comprising computer-executable instructions that, when executed, direct the printing device to initiate a calibration system operable to identify a designation area of the master calibration page that distinguishes the master calibration page from a local calibration page.

28. One or more computer-readable media as recited in claim 23, further comprising computer-executable instructions that, when executed, direct the printing device to generate a target color value curve from the measured color value indicia and calibrate the print unit according to the target color value curve.

29. One or more computer-readable media comprising computer-executable instructions that, when executed, direct a printing device to operate in a selectable one of a learning mode and a normal mode:

when in the learning mode, receive a master calibration page containing color value indicia and measure the color value indicia to determine target color values each corresponding to a color value indicia; and

when in a normal mode, calibrate a print unit according to one or more of the target color values.

30. One or more computer-readable media as recited in claim 29, further comprising computer-executable instructions that, when executed, direct the printing device to operate in conjunction with a calibration system.

31. One or more computer-readable media as recited in claim 29, further comprising computer-executable instructions that, when executed, direct the printing device when in the learning mode to generate a target color value curve from the measured color value indicia, and when in the normal mode to calibrate the print unit according to the target color value curve.

32. One or more computer-readable media as recited in claim 29, further comprising computer-executable instructions that, when executed, direct the printing device when in the learning mode to identify a designation area of the master calibration page that distinguishes the master calibration page from a local calibration page.

33. A method for calibrating a printing device, comprising:
receiving color value indicia;
measuring the color value indicia to determine target color values each corresponding to a color value indicia; and
utilizing one or more of the target color values to calibrate the printing device.

34. A method as recited in claim 33, wherein receiving the color value indicia includes receiving a master calibration page containing the color value indicia.

35. A method as recited in claim 33, wherein the color value indicia is received from an external calibration system that communicates the color value indicia to the printing device.

36. A method as recited in claim 33, further comprising communicating the target color values to the printing device, wherein:

an external calibration system receives a master calibration page containing the color value indicia, measures the color value indicia, and communicates the one or more target color values to the printing device; and
the printing device utilizes the one or more target color values.

37. A method as recited in claim 32, further comprising generating a target color value curve from the measured color value indicia.

38. A method as recited in claim 33, further comprising calibrating a plurality of printing devices according to the one or more target color values.

39. A method as recited in claim 33, wherein receiving the color value indicia includes receiving a master calibration page containing the color value indicia with a calibration system.

40. A method as recited in claim 33, further comprising sensing the color value indicia with one or more sensors of a calibration system to measure the color value indicia.

41. A method as recited in claim 33, further comprising identifying a designation area of a master calibration page that contains the color value indicia, the designation area distinguishing the master calibration page from a local calibration page.

42. A method for calibrating a plurality of printing devices such that each of the printing devices are calibrated to generate substantially similar color values, each of the printing devices being calibrated according to the method as recited in claim 33.

43. A method for calibrating a plurality of printing devices such that each printing device is calibrated to generate substantially similar color values, each of the printing devices being calibrated according to the method as recited in claim 33, and wherein each of the printing devices receive a master calibration page containing the color value indicia.

44. A printing system, comprising:
means for receiving a master calibration page containing color value indicia;
means for measuring the color value indicia to determine target color values each corresponding to a color value indicia; and
means for utilizing the target color values to calibrate a print unit.